

## REMARKS

Applicants acknowledge receipt of an Office Action dated November 19, 2002. Applicants have made minor changes to the specification to correct a translation error. Support for these amendments may be found in the originally filed PCT document which uses the term "Wurstbrat" which means "sausage meat" or "meat stuffing".

In addition, Applicants have amended claims 6 and 22 and have added claim 24. Applicants expressly request entry of these amendments under the provisions of 37 C.F.R. §1.116(c). Although these amendments may touch the merits of the application, the PTO has cited new rejections. The present amendments do not require further search or consideration.

Reconsideration of the present application is respectfully requested in view of the remarks which follow.

### **Rejections Under 35 U.S.C. §112, 1<sup>st</sup> Paragraph**

On page 2 of the Office Action, the PTO has rejected claims 22 and 23 under 35 U.S.C. §112, 1<sup>st</sup> paragraph as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, were in possession of the claimed invention. Applicants respectfully traverse this rejection for the reasons set forth below.

With regard to the phrase "uniform adherence to fillings" in claim 22, Applicants have amended claim 22 to delete the phrase "during frying". Support for amended claim 22 may be found in the specification, *inter alia* at lines 13-22 on page 8.

With regard to the phrase "can be peeled away without destroying the casing" in claim 23, support may be found in the specification, *inter alia* at lines 13-22 on page 8.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections under §112, 1<sup>st</sup> paragraph.

**Rejections Under 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph**

On page 3 of the Office Action, the PTO has rejected claims 22 and 23 under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph as allegedly being indefinite. Applicants respectfully traverse this rejection for the reasons set forth below.

With regard to the phrase "uniform adherence to fillings" in claim 22 and with regard to the phrase "can be peeled away without destroying the casing" in claim 23, Applicants submit that these phrases are clear and definite to those skilled in the art. Applicants respectfully request reconsideration of this rejection, particularly in view of the January 17, 2003 memo to the Patent Examining Corps from Stephen G. Kunin (Deputy Commissioner for Patent Examination Policy) regarding PTO policy with respect to rejections under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph (a copy of which is attached hereto).

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph.

**Rejections Under 35 U.S.C. § 102**

On page 3 of the Office Action, the PTO has rejected claims 6, 9-11, 13 and 21-23 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,736,179 to Hammer *et al.* (hereafter "Hammer '179"). As set forth below, Applicants respectfully traverse this rejection.

As an initial matter, Applicants wish to point out that Hammer '179 relates to a casing which is intended to impede, or prevent, the penetration of cellulytic enzymes such as cellulase. Hammer '179 accomplishes this object by impregnating the surface of the cellulose casing in the gel state with chitosan. The treatment with cellulase at column 5, lines 5-15 is nothing more than a test method used to measure the efficiency/effectiveness of the impregnation of the casing. In the test method, cellulytic enzymes are not deactivated and the casing is ultimately severely damaged or even destroyed (this can be seen by the weight loss of the casing in Example 4).

In contrast, in the presently claimed invention, the casing is deliberately treated with cellulase. It is quite surprising to find that the cellulose casings, once they have been treated with cellulase (which is then permanently inactivated) show a roughened

surface. The inactivated enzyme (still present as part of the product) improves adhesion between the casing and the filling. The present application discusses this at the second full paragraph on page 6. There it is stated that "[t]he enzyme [cellulase] which has been inactivated can be used at the same time as an adhesive impregnation."

In addition, Applicants note that the cellulytic degradation caused by the time-limited action of the cellulase occurs predominantly on the surface rather than depthwise. At page 6, lines 7-9 of the specification, it is stated that "[s]ubsequent cellulytic degradation therefore takes place predominantly on the surface, and to a lesser extent depthwise."

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See generally MPEP §2131. Here, Hammer '179 fails to disclose modification of the surface of a tubular foodstuff casing by "by the time-limited action of at least one cellulase to produce a modified surface comprising inactivated cellulase" as recited in amended claim 6. As a result of this difference in the preparation process, the presently claimed product (1) has a different surface roughness profile since "degradation...takes place predominantly on the surface" and (2) includes inactivated cellulase which acts as an adhesive impregnation. For these reasons, Applicants respectfully disagree with the PTO's position (set forth in the first full paragraph on page 4) that the product of Hammer '179 is the same as the presently claimed product despite differences in the process of manufacture.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections under §102.

### **Rejections Under 35 U.S.C. §103**

On page 5 of the Office Action, the PTO has rejected claims 1 and 3 under 35 U.S.C. §103(a) as being unpatentable over Hammer '179. Applicants respectfully traverse this rejection for the reasons set forth below.

As discussed *supra*, Applicants wish to point out that Hammer '179 relates to a casing which is intended to impede, or prevent, the penetration of cellulytic enzymes such as cellulase. Hammer '179 accomplishes this object by impregnating the surface of the cellulose casing in the gel state with chitosan. The treatment with cellulase at column 5, lines 5-15 is nothing more than a test method used to measure the efficiency/effectiveness of the impregnation of the casing. In the test method, cellulytic enzymes are not deactivated and the casing is ultimately severely damaged or even destroyed (this can be seen by the weight loss of the casing in Example 4).

In contrast, in the presently claimed invention, the casing is deliberately treated with cellulase. It is quite surprising to find that the cellulose casings, once they have been treated with cellulase (which is then deliberately permanently inactivated) show a roughened surface. The inactivated enzyme (still present as part of the product) improves adhesion between the casing and the filling. The present application discusses this at the second full paragraph on page 6. There it is stated that "[t]he enzyme [cellulase] which has been inactivated can be used at the same time as an adhesive impregnation."

In addition, Applicants note that the cellulytic degradation caused by the time-limited action of the cellulase occurs predominantly on the surface rather than depthwise. At page 6, lines 7-9 of the specification, it is stated that "[s]ubsequent cellulytic degradation therefore takes place predominantly on the surface, and to a lesser extent depthwise."

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA 1974). See MPEP §2143.03. Here, Hammer '179 fails to teach or properly suggest the deliberate step of "inactivating [the] cellulase permanently" as recited in claim 1. As a result of this difference in the preparation process, the presently claimed product (1) has a different surface roughness profile since "degradation...takes place predominantly on the surface" and (2) includes inactivated cellulase which acts as an adhesive impregnation.

Also, the PTO must establish a proper motivation for modifying the prior art. Here, Applicants respectfully disagree with the PTO's argument that the presently claimed process would have been obvious to one of ordinary skill in the art since subsequent cooking of the filled foodstuffs would result in inactivation of cellulase. The PTO states that Hammer '179 discloses that "the casing surface is treated with cellulase (cellulytic enzymes), yielding weight loss (column 5, lines 5-15)". As an initial matter, Applicants note that the cited passage of Hammer '179 describes comparative tests which demonstrate that the casings prepared with the treatment of Hammer '179 exhibited less weight loss than untreated casings. However, Hammer '179, read as a whole, teaches away from the application of cellulase to foodstuff casings and does not suggest the desirability of the presently claimed invention. Specifically, at col. 1, lines 47-50, Hammer '179 states that "the casing according to the invention is intended to impede, or possibly prevent, the penetration of cellulytic enzymes such as cellulase." Thus, the sole purpose of application of cellulase was to demonstrate that the casings treated in the manner suggested by Hammer '179 exhibited superior properties to untreated casings. Applicants note that the PTO must consider the prior art in its entirety, including disclosures that teach away from the claims. See MPEP 2141 .02

Applicants therefore submit that one of ordinary skill in the art would not be motivated to cook a foodstuff casing which was treated with cellulase solely to provide comparative data when Hammer '179 expressly teaches that exposure of a casing to cellulase should be impeded or prevented.

Finally, Applicants note that proceeding contrary to accepted wisdom is evidence of nonobviousness. See MPEP 2145. Here, Applicants have noted in the first full paragraph on page 5 of the specification that "[e]nzymes having a cellulytic action are generally feared in the meat products sector and everything has been done to avoid their occurrence." Hammer '179's teaching to treat casings in order to impede or prevent the penetration of cellulytic enzymes into the casing demonstrates this view in the art. Accordingly, Applicants submit that the active step of "allowing at least one cellulase to act on the surface of the tubular foodstuff casings" is contrary to accepted wisdom.

If an independent claim is nonobvious under §103, then any claim depending therefrom is nonobvious. *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). See MPEP 2143.03. Thus, Applicants submit that claim 3, which depends from claim 1, is also non-obvious.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection under §103.

**Newly Added Claim 24**

Applicants submit that newly added claim 24 is allowable inasmuch as Hammer '179 fails to teach or properly suggest a "tubular foodstuff casing based on cellulose hydrate comprising inactivated cellulase" as recited in claim 24. Applicants respectfully request entry and consideration of claim 24 since the PTO has already considered the issue of inactivation of cellulase on foodstuff casings in the context of the method claims.

If an independent claim is nonobvious under §103, then any claim depending therefrom is nonobvious. *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). See MPEP 2143.03. Thus, Applicants submit that claim 3, which depends from claim 1, is also non-obvious.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection under §103.

#### Newly Added Claim 24

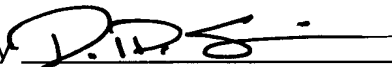
Applicants submit that newly added claim 24 is allowable inasmuch as Hammer '179 fails to teach or properly suggest a "tubular foodstuff casing based on cellulose hydrate comprising inactivated cellulase" as recited in claim 24. Applicants respectfully request entry and consideration of claim 24 since the PTO has already considered the issue of inactivation of cellulase on foodstuff casings in the context of the method claims.

#### CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that all of the pending claims are now in condition for allowance. An early notice to this effect is earnestly solicited. If there are any questions regarding the application, the Examiner is invited to contact the undersigned at the number below.

Respectfully submitted,

Date 3/19/03

By 

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**MARKED UP VERSION SHOWING CHANGES MADE**

Below are the marked up replacement paragraph(s):

Page 1, line 24 to page 2, line 11:

The tubular sausage casings based on hydrated cellulose which are produced in this way are often treated with various preparations on the inside and/or outside, according to the envisaged end use. For example, blood sausage adheres very firmly to the hydrated cellulose casing. So that the casing can nevertheless be peeled off easily, without thereby tearing open the frying surface, it is provided with a release preparation on the inside. A suitable release preparation comprises, for example, a chromium-fatty acid complex compound and a dialkyl-polysiloxane. **[Long-life frying sausage] Sausage meat for long-lasting sausages**, on the other hand, has the tendency to become detached from the cellulose casing in the course of time. The adherence between the **[frying sausage] meat stuffing** and casing is therefore increased with an appropriate internal preparation. The adherence preparation also comprises a water-insoluble cured cationic resin and an oil. The oil here may be a vegetable oil, a triglyceride mixture of plant fatty acids, a paraffin oil or a silicone oil. Other preparations comprise a resin and particles or fibers of plastic or cellulose. They provide a rough surface.

Page 5, paragraph starting at line 5:

Enzymes having a cellulytic action are generally feared in the meat products sector and everything has been done to avoid their occurrence. In the maturation of long-life sausages, they can be formed by certain molds and yeasts under adverse climatic conditions and can cause hydrated cellulose casings to be severely damaged or even destroyed. Damaged casings can be removed from the **[frying sausage] meat stuffing** only with great difficulty and also only in shreds.

Page 8, paragraph starting at line 13:

Long watered sections could be pushed effortlessly onto the filling pipe. The casing was then filled with **[long-life frying sausage] sausage m at for long-lasting sausages**.



Even after a long period of maturation, the casing still adhered adequately and uniformly to the **[frying sausage ] meat stuffing**. At the end of the maturation process, the casings could be peeled off without any difficulty. The ease of peeling was evaluated as "2.5" (subjective scale from 1 to 6; 1 = can be peeled off very easily, 6 = can be peeled off only by destroying the casing or tearing open the frying surface).

Below are the marked up amended claim(s):

6. (Twice Amended) A tubular foodstuff casing based on cellulose hydrate, the surface of which is modified by the time-limited action of at least one cellulase to produce a modified surface comprising inactivated cellulase.

22. (Amended) A tubular shaped article according to claim 6, wherein the casing exhibits uniform adherence to the fillings **[during frying]**.